

20010-06USA\_Sequence\_Listing.txt  
SEQUENCE LISTING

<110> POSCO  
POSTECH Foundation  
CHA, Hyung Joon  
HWANG, Dong Soo

<120> Mussel Bioadhesive

<130> 20010-06USA

<140> US 10/

<141> 2006-09-20

<150> PCT/KR2005/000888

<151> 2005-03-25

<150> US 60/556,805

<151> 2004-03-26

<160> 35

<170> KopatentIn 1.71

<210> 1

<211> 30

<212> DNA

<213> Artificial Sequence

<220>

<223> primer

<400> 1

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30

<210> 2

<211> 29

<212> DNA

<213> Artificial Sequence

<220>

<223> primer

<400> 2

gttagatctat acgccggacc agtgaacag

29

<210> 3

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> primer

<400> 3

cttgttat tttt ccgctgtttt t

21

<210> 4

## 20010-06USA\_Sequence\_Listing.txt

<211> 21  
<212> DNA  
<213> Artificial Sequence  
  
<220>  
<223> primer

<400> 4  
aaaaacagcg gaaaatacaa g

21

<210> 5  
<211> 228  
<212> DNA  
<213> Mytilus galloprovincialis

<220>  
<221> CDS  
<222> (1)...(228)  
<223> Mytilus galloprovincialis foot protein-5 cDNA

<400> 5  
agt tct gaa gaa tac aaa ggt ggt tat tac cca ggc aat act tac cac  
Ser Ser Glu Glu Tyr Lys Gly Gly Tyr Tyr Pro Gly Asn Thr Tyr His  
1 5 10 15

48

tat cat tca ggt ggt agt tat cac gga tcc ggc tat cat gga gga tat  
Tyr His Ser Gly Gly Ser Tyr His Gly Ser Gly Tyr His Gly Gly Tyr  
20 25 30

96

aag gga aag tat tac gga aag gca aag aaa tac tat tat aaa tat aaa  
Lys Gly Lys Tyr Tyr Gly Lys Ala Lys Lys Tyr Tyr Tyr Lys Tyr Lys  
35 40 45

144

aac agc gga aaa tac aag tat ctg aag aaa gct aga aaa tac cat aga  
Asn Ser Gly Lys Tyr Lys Tyr Leu Lys Lys Ala Arg Lys Tyr His Arg  
50 55 60

192

aag ggt tac aag aag tat tat gga ggt ggt agc agt  
Lys Gly Tyr Lys Lys Tyr Tyr Gly Gly Ser Ser  
65 70 75

228

<210> 6  
<211> 76  
<212> PRT  
<213> Mytilus galloprovincialis

<400> 6  
Ser Ser Glu Glu Tyr Lys Gly Gly Tyr Tyr Pro Gly Asn Thr Tyr His  
1 5 10 15

Tyr His Ser Gly Gly Ser Tyr His Gly Ser Gly Tyr His Gly Gly Tyr  
20 25 30

Lys Gly Lys Tyr Tyr Gly Lys Ala Lys Lys Tyr Tyr Tyr Lys Tyr Lys  
35 40 45

Asn Ser Gly Lys Tyr Lys Tyr Leu Lys Lys Ala Arg Lys Tyr His Arg  
50 55 60

20010-06USA\_Sequence\_Listing.txt  
Lys Gly Tyr Lys Lys Tyr Tyr Gly Gly Gly Ser Ser  
65 70 75

<210> 7  
<211> 180  
<212> DNA  
<213> mytilus edulis

<220>  
<221> CDS  
<222> (1)..(180)  
<223> 6 times repeated sequence derived from mytilus edulis foot  
protein-1

<400> 7  
gct aaa ccg tct tac ccg ccg acc tac aaa gca aaa ccc tcg tac cca 48  
Ala Lys Pro Ser Tyr Pro Pro Thr Tyr Lys Ala Lys Pro Ser Tyr Pro  
1 5 10 15

ccg act tat aag gct aaa cct agc tat cca cct acg tac aaa gct aaa 96  
Pro Thr Tyr Lys Ala Lys Pro Ser Tyr Pro Pro Thr Tyr Lys Ala Lys  
20 25 30

ccg tct tac ccg ccg act tac aaa gca aaa ccg tcc tac cct ccg acc 144  
Pro Ser Tyr Pro Pro Thr Tyr Lys Ala Lys Pro Ser Tyr Pro Pro Thr  
35 40 45

tat aag gct aaa ccg agt tac ccc ccg act tac aaa 180  
Tyr Lys Ala Lys Pro Ser Tyr Pro Pro Thr Tyr Lys  
50 55 60

<210> 8  
<211> 60  
<212> PRT  
<213> mytilus edulis

<400> 8  
Ala Lys Pro Ser Tyr Pro Pro Thr Tyr Lys Ala Lys Pro Ser Tyr Pro  
1 5 10 15

Pro Thr Tyr Lys Ala Lys Pro Ser Tyr Pro Pro Thr Tyr Lys Ala Lys  
20 25 30

Pro Ser Tyr Pro Pro Thr Tyr Lys Ala Lys Pro Ser Tyr Pro Pro Thr  
35 40 45

Tyr Lys Ala Lys Pro Ser Tyr Pro Pro Thr Tyr Lys  
50 55 60

<210> 9  
<211> 411  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Bioadhesive protein(mgfp-150) coding sequence

<220>

## 20010-06USA\_Sequence\_Listing.txt

<221> CDS  
<222> (1)..(411)  
<223> Bioadhesive protein(mgfp-150)

<400>	9			
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Ala Lys Pro Ser Tyr Pro Pro Thr Tyr Lys Ala Lys Pro Ser Tyr Pro	1	5	10	15
ccg act tat aag gct aaa cct agc tat cca cct acg tac aaa gct aaa			96	
Pro Thr Tyr Lys Ala Lys Pro Ser Tyr Pro Pro Thr Tyr Lys Ala Lys	20	25	30	
ccg tct tac ccg ccg act tac aaa gca aaa ccg tcc tac cct ccg acc			144	
Pro Ser Tyr Pro Pro Thr Tyr Lys Ala Lys Pro Ser Tyr Pro Pro Thr	35	40	45	
tat aag gct aaa ccg agt tac ccc ccg act tac aaa agt tct gaa gaa			192	
Tyr Lys Ala Lys Pro Ser Tyr Pro Pro Thr Tyr Lys Ser Ser Glu Glu	50	55	60	
tac aag ggt ggt tat tac cca ggc aat tcg aac cac tat cat tca ggt			240	
Tyr Lys Gly Gly Tyr Tyr Pro Gly Asn Ser Asn His Tyr His Ser Gly	65	70	75	80
ggt agt tat cac gga tcc ggc tac cat gga gga tat aag gga aag tat			288	
Gly Ser Tyr His Gly Ser Gly Tyr His Gly Gly Tyr Lys Gly Lys Tyr	85	90	95	
tac gga aag gca aag aaa tac tat tat aaa tat aaa aac agc gga aaa			336	
Tyr Gly Lys Ala Lys Lys Tyr Tyr Tyr Lys Tyr Lys Asn Ser Gly Lys	100	105	110	
tac aag tat cta aag aaa gct aya aaa tac cat aga aag ggt tac aag			384	
Tyr Lys Tyr Leu Lys Lys Ala Arg Lys Tyr His Arg Lys Gly Tyr Lys	115	120	125	
aag tat tat gga ggt agc agt gaa ttc			411	
Lys Tyr Tyr Gly Gly Ser Ser Glu Phe	130	135		

<210> 10  
<211> 137  
<212> PRT  
<213> Artificial Sequence

<400>	10			
Ala Lys Pro Ser Tyr Pro Pro Thr Tyr Lys Ala Lys Pro Ser Tyr Pro	1	5	10	15
Pro Thr Tyr Lys Ala Lys Pro Ser Tyr Pro Pro Thr Tyr Lys Ala Lys	20	25	30	
Pro Ser Tyr Pro Pro Thr Tyr Lys Ala Lys Pro Ser Tyr Pro Pro Thr	35	40	45	
Tyr Lys Ala Lys Pro Ser Tyr Pro Pro Thr Tyr Lys Ser Ser Glu Glu	50	55	60	
Tyr Lys Gly Gly Tyr Tyr Pro Gly Asn Ser Asn His Tyr His Ser Gly	65	70	75	80

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Gly Ser Tyr His Gly Ser Gly Tyr His Gly Gly Tyr Lys Gly Lys Tyr  
 85 90 95  
 Tyr Gly Lys Ala Lys Lys Tyr Tyr Tyr Lys Tyr Lys Asn Ser Gly Lys  
 100 105 110  
 Tyr Lys Tyr Leu Lys Lys Ala Arg Lys Tyr His Arg Lys Gly Tyr Lys  
 115 120 125  
 Lys Tyr Tyr Gly Gly Ser Ser Glu Phe  
 130 135

<210> 11  
 <211> 411  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Bioadhesive protein(mgfp-051) coding sequence

<220>  
 <221> CDS  
 <222> (1)..(411)  
 <223> Bioadhesive protein(mgfp-051)

<400> 11 agt tct gaa gaa tac aag ggt ggt tat tac cca ggc aat tcg aac cac Ser Ser Glu Glu Tyr Lys Gly Gly Tyr Tyr Pro Gly Asn Ser Asn His 1 5 10 15	48
tat cat tca ggt ggt agt tat cac gga tcc ggc tac cat gga gga tat Tyr His Ser Gly Ser Tyr His Gly Ser Gly Tyr His Gly Gly Tyr 20 25 30	96
aag gga aag tat tac gga aag gca aag aaa tac tat tat aaa tat aaa Lys Gly Lys Tyr Tyr Gly Lys Ala Lys Lys Tyr Tyr Lys Tyr Lys 35 40 45	144
aac agc gga aaa tac aag tat cta aag aaa gct aga aaa tac cat aga Asn Ser Gly Lys Tyr Lys Tyr Leu Lys Lys Ala Arg Lys Tyr His Arg 50 55 60	192
aag ggt tac aag aag tat tat gga ggt agc agt gaa ttc gct aaa ccg Lys Gly Tyr Lys Lys Tyr Gly Ser Ser Glu Phe Ala Lys Pro 65 70 75 80	240
tct tac ccg ccg acc tac aaa gca aaa ccc tcg tac cca ccg act tat Ser Tyr Pro Pro Thr Tyr Lys Ala Lys Pro Ser Tyr Pro Pro Thr Tyr 85 90 95	288
aag gct aaa cct agc tat cca cct acg tac aaa gct aaa ccg tct tac Lys Ala Lys Pro Ser Tyr Pro Pro Thr Tyr Lys Ala Lys Pro Ser Tyr 100 105 110	336
ccg ccg act tac aaa gca aaa ccg tcc tac cct ccg acc tat aag gct Pro Pro Thr Tyr Lys Ala Lys Pro Ser Tyr Pro Pro Thr Tyr Lys Ala 115 120 125	384
aaa ccg agt tac ccc ccg act tac aaa	411

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Lys Pro Ser Tyr Pro Pro Thr Tyr Lys  
130 135

<210> 12  
<211> 137  
<212> PRT  
<213> Artificial Sequence

<400> 12  
Ser Ser Glu Glu Tyr Lys Gly Gly Tyr Tyr Pro Gly Asn Ser Asn His  
1 5 10 15  
Tyr His Ser Gly Gly Ser Tyr His Gly Ser Gly Tyr His Gly Gly Tyr  
20 25 30  
Lys Gly Lys Tyr Tyr Gly Lys Ala Lys Lys Tyr Tyr Tyr Lys Tyr Lys  
35 40 45  
Asn Ser Gly Lys Tyr Lys Tyr Leu Lys Lys Ala Arg Lys Tyr His Arg  
50 55 60  
Lys Gly Tyr Lys Lys Tyr Tyr Gly Gly Ser Ser Glu Phe Ala Lys Pro  
65 70 75 80  
Ser Tyr Pro Pro Thr Tyr Lys Ala Lys Pro Ser Tyr Pro Pro Thr Tyr  
85 90 95  
Lys Ala Lys Pro Ser Tyr Pro Pro Thr Tyr Lys Ala Lys Pro Ser Tyr  
100 105 110  
Pro Pro Thr Tyr Lys Ala Lys Pro Ser Tyr Pro Pro Thr Tyr Lys Ala  
115 120 125  
Lys Pro Ser Tyr Pro Pro Thr Tyr Lys  
130 135

<210> 13  
<211> 591  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Bioadhesive protein(mgfp-151) coding sequence

<220>  
<221> CDS  
<222> (1)..(591)  
<223> Bioadhesive protein(mgfp-151)

<400> 13  
gct aaa ccg tct tac ccg ccg acc tac aaa gca aaa ccc tcg tac cca 48  
Ala Lys Pro Ser Tyr Pro Pro Thr Tyr Lys Ala Lys Pro Ser Tyr Pro  
1 5 10 15  
ccg act tat aag gct aaa cct agc tat cca cct acg tac aaa gct aaa 96  
Pro Thr Tyr Lys Ala Lys Pro Ser Tyr Pro Pro Thr Tyr Lys Ala Lys  
20 25 30  
ccg tct tac ccg ccg act tac aaa gca aaa ccg tcc tac cct ccg acc  
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Pro Ser Tyr Pro Pro Thr Tyr Lys Ala Lys Pro Ser Tyr Pro Pro Thr			
35	40	45	
tat aag gct aaa ccg agt tac ccc ccg act tac aaa agt tct gaa gaa		192	
Tyr Lys Ala Lys Pro Ser Tyr Pro Pro Thr Tyr Lys Ser Ser Glu Glu			
50	55	60	
tac aag ggt ggt tat tac cca ggc aat tcg aac cac tat cat tca ggt		240	
Tyr Lys Gly Gly Tyr Tyr Pro Gly Asn Ser Asn His Tyr His Ser Gly			
65	70	75	80
ggt agt tat cac gga tcc ggc tac cat gga gga tat aag gga aag tat		288	
Gly Ser Tyr His Gly Ser Gly Tyr His Gly Gly Tyr Lys Gly Lys Tyr			
85	90	95	
tac gga aag gca aag aaa tac tat tat aaa tat aaa aac agc gga aaa		336	
Tyr Gly Lys Ala Lys Lys Tyr Tyr Tyr Lys Tyr Lys Asn Ser Gly Lys			
100	105	110	
tac aag tat cta aag aaa gct aga aaa tac cat aga aag ggt tac aag		384	
Tyr Lys Tyr Leu Lys Lys Ala Arg Lys Tyr His Arg Lys Gly Tyr Lys			
115	120	125	
aag tat tat gga ggt agc agt gaa ttc gct aaa ccg tct tac ccg ccg		432	
Lys Tyr Tyr Gly Gly Ser Ser Glu Phe Ala Lys Pro Ser Tyr Pro Pro			
130	135	140	
acc tac aaa gca aaa ccc tcg tac cca ccg act tat aag gct aaa cct		480	
Thr Tyr Lys Ala Lys Pro Ser Tyr Pro Pro Thr Tyr Lys Ala Lys Pro			
145	150	155	160
agc tat cca cct acg tac aaa gct aaa ccg tct tac ccg ccg act tac		528	
Ser Tyr Pro Pro Thr Tyr Lys Ala Lys Pro Ser Tyr Pro Pro Thr Tyr			
165	170	175	
aaa gca aaa ccg tcc tac cct ccg acc tat aag gct aaa ccg agt tac		576	
Lys Ala Lys Pro Ser Tyr Pro Pro Thr Tyr Lys Ala Lys Pro Ser Tyr			
180	185	190	
ccc ccg act tac aaa		591	
Pro Pro Thr Tyr Lys			
195			
<210> 14			
<211> 197			
<212> PRT			
<213> Artificial Sequence			
<400> 14			
Ala Lys Pro Ser Tyr Pro Pro Thr Tyr Lys Ala Lys Pro Ser Tyr Pro			
1	5	10	15
Pro Thr Tyr Lys Ala Lys Pro Ser Tyr Pro Pro Thr Tyr Lys Ala Lys			
20	25	30	
Pro Ser Tyr Pro Pro Thr Tyr Lys Ala Lys Pro Ser Tyr Pro Pro Thr			
35	40	45	
Tyr Lys Ala Lys Pro Ser Tyr Pro Pro Thr Tyr Lys Ser Ser Glu Glu			
50	55	60	
Tyr Lys Gly Gly Tyr Tyr Pro Gly Asn Ser Asn His Tyr His Ser Gly			

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65	70	75	80
Gly Ser Tyr His Gly Ser Gly Tyr His Gly Gly Tyr Lys Gly Lys Tyr			
85	90	95	
Tyr Gly Lys Ala Lys Lys Tyr Tyr Lys Tyr Lys Asn Ser Gly Lys			
100	105	110	
Tyr Lys Tyr Leu Lys Lys Ala Arg Lys Tyr His Arg Lys Gly Tyr Lys			
115	120	125	
Lys Tyr Tyr Gly Gly Ser Ser Glu Phe Ala Lys Pro Ser Tyr Pro Pro			
130	135	140	
Thr Tyr Lys Ala Lys Pro Ser Tyr Pro Pro Thr Tyr Lys Ala Lys Pro			
145	150	155	160
Ser Tyr Pro Pro Thr Tyr Lys Ala Lys Pro Ser Tyr Pro Pro Thr Tyr			
165	170	175	
Lys Ala Lys Pro Ser Tyr Pro Pro Thr Tyr Lys Ala Lys Pro Ser Tyr			
180	185	190	
Pro Pro Thr Tyr Lys			
195			

<210> 15  
<211> 354  
<212> DNA  
<213> Artificial Sequence  
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<220>  
<221> CDS  
<222> (1)..(351)  
<223> Bioadhesive recombinant protein expressed in pMDG05 vector

<b>&lt;400&gt;</b>	<b>15</b>		
atg ggg ggt tct cat cat cat cat ggt atg gct agc atg act			
Met Gly Gly Ser His His His His His Gly Met Ala Ser Met Thr			
1	5	10	15
ggt gga cag caa atg ggt cgg act ctg tac gac gat gac gat aag gat			
Gly Gly Gln Gln Met Gly Arg Thr Leu Tyr Asp Asp Asp Lys Asp			
20	25	30	
cga tgg gga tcc gag ctc gag atc tgc agc agt tct gaa gaa tac aag			
Arg Trp Gly Ser Glu Leu Glu Ile Cys Ser Ser Glu Glu Tyr Lys			
35	40	45	
ggt ggt tat tac cca ggc aat tcg aac cac tat cat tca ggt ggt agt			
Gly Gly Tyr Tyr Pro Gly Asn Ser Asn His Tyr His Ser Gly Gly Ser			
50	55	60	
tat cac gga tcc ggc tac cat gga gga tat aag gga aag tat tac gga			
Tyr His Gly Ser Gly Tyr His Gly Gly Tyr Lys Gly Lys Tyr Tyr Gly			
65	70	75	80

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aag gca aag aaa tac tat tat aaa tat aaa aac agc gga aaa tac aag Lys Ala Lys Lys Tyr Tyr Tyr Lys Tyr Lys Asn Ser Gly Lys Tyr Lys 85 90 95	288
tat cta aag aaa gct aga aaa tac cat aga aag ggt tac aag aag tat Tyr Leu Lys Lys Ala Arg Lys Tyr His Arg Lys Gly Tyr Lys Lys Tyr 100 105 110	336
tat gga ggt agc agt taa Tyr Gly Ser Ser 115	354
<210> 16	
<211> 117	
<212> PRT	
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<400> 16	
Met Gly Gly Ser His His His His His His Gly Met Ala Ser Met Thr 1 5 10 15	
Gly Gly Gln Gln Met Gly Arg Thr Leu Tyr Asp Asp Asp Asp Lys Asp 20 25 30	
Arg Trp Gly Ser Glu Leu Glu Ile Cys Ser Ser Ser Glu Glu Tyr Lys 35 40 45	
Gly Gly Tyr Tyr Pro Gly Asn Ser Asn His Tyr His Ser Gly Gly Ser 50 55 60	
Tyr His Gly Ser Gly Tyr His Gly Gly Tyr Lys Gly Lys Tyr Tyr Gly 65 70 75 80	
Lys Ala Lys Lys Tyr Tyr Lys Tyr Lys Asn Ser Gly Lys Tyr Lys 85 90 95	
Tyr Leu Lys Ala Arg Lys Tyr His Arg Lys Gly Tyr Lys Lys Tyr 100 105 110	
Tyr Gly Gly Ser Ser 115	
<210> 17	
<211> 456	
<212> DNA	
<213> Artificial Sequence	
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<220>	
<221> CDS	
<222> (1)..(453)	
<223> Bioadhesive recombinant protein expressed in pMDG150 vector	
<400> 17	
atg ggg ggt tct cat cat cat cat cat ggt atg gct agc gct aaa	
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Met Gly Gly Ser His His His His His His Gly Met Ala Ser Ala Lys	
1 5 10 15	
ccg tct tac ccg ccg acc tac aaa gca aaa ccc tcg tac cca ccg act	96
Pro Ser Tyr Pro Pro Thr Tyr Lys Ala Lys Pro Ser Tyr Pro Pro Thr	
20 25 30	
tat aag gct aaa cct agc tat cca cct acg tac aaa gct aaa ccg tct	144
Tyr Lys Ala Lys Pro Ser Tyr Pro Pro Thr Tyr Lys Ala Lys Pro Ser	
35 40 45	
tac ccg ccg act tac aaa gca aaa ccg tcc tac cct ccg acc tat aag	192
Tyr Pro Pro Thr Tyr Lys Ala Lys Pro Ser Tyr Pro Pro Thr Tyr Lys	
50 55 60	
gct aaa ccg agt tac ccc ccg act tac aaa ggc tgc agt tct gaa gaa	240
Ala Lys Pro Ser Tyr Pro Pro Thr Tyr Lys Gly Cys Ser Ser Glu Glu	
65 70 75 80	
tac aag ggt ggt tat tac cca ggc aat tcg aac cac tat cat tca ggt	288
Tyr Lys Gly Gly Tyr Tyr Pro Gly Asn Ser Asn His Tyr His Ser Gly	
85 90 95	
ggt agt tat cac gga tcc ggc tac cat gga gga tat aag gga aag tat	336
Gly Ser Tyr His Gly Ser Gly Tyr His Gly Gly Tyr Lys Gly Lys Tyr	
100 105 110	
tac gga aag gca aag aaa tac tat tat aaa tat aaa aac aac gga aaa	384
Tyr Gly Lys Ala Lys Lys Tyr Tyr Lys Tyr Lys Asn Ser Gly Lys	
115 120 125	
tac aag tat cta aag aaa gct aga aaa tac cat aga aag ggt tac aag	432
Tyr Lys Tyr Leu Lys Lys Ala Arg Lys Tyr His Arg Lys Gly Tyr Lys	
130 135 140	
aag tat tat gga ggt agc agt taa	456
Lys Tyr Tyr Gly Gly Ser Ser	
145 150	
<210> 18	
<211> 151	
<212> PRT	
<213> Artificial Sequence	
<400> 18	
Met Gly Gly Ser His His His His His His Gly Met Ala Ser Ala Lys	
1 5 10 15	
Pro Ser Tyr Pro Pro Thr Tyr Lys Ala Lys Pro Ser Tyr Pro Pro Thr	
20 25 30	
Tyr Lys Ala Lys Pro Ser Tyr Pro Pro Thr Tyr Lys Ala Lys Pro Ser	
35 40 45	
Tyr Pro Pro Thr Tyr Lys Ala Lys Pro Ser Tyr Pro Pro Thr Tyr Lys	
50 55 60	
Ala Lys Pro Ser Tyr Pro Pro Thr Tyr Lys Gly Cys Ser Ser Glu Glu	
65 70 75 80	
Tyr Lys Gly Gly Tyr Tyr Pro Gly Asn Ser Asn His Tyr His Ser Gly	
85 90 95	

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Gly Ser Tyr His Gly Ser Gly Tyr His Gly Gly Tyr Lys Gly Lys Tyr  
 100 105 110

Tyr Gly Lys Ala Lys Lys Tyr Tyr Tyr Lys Tyr Lys Asn Ser Gly Lys  
115 120 125

Tyr Lys Tyr Leu Lys Lys Ala Arg Lys Tyr His Arg Lys Gly Tyr Lys  
130 135 140

Lys Tyr Tyr Gly Gly Ser Ser  
145 150

<210> 19  
<211> 540  
<212> DNA  
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<220>
<223> construct for expression of Bioadhesive protein(mgfp-051) in
pMDG051 vector
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<220>  
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<222> (1)..(537)  
<223> Bioadhesive recombinant protein expressed in pMDG051 vector

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<400>      19
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Met Gly Gly Ser His His His His His His Gly Met Ala Ser Met Thr
1           5           10          15

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ggt gga cag caa atg ggt cg<sup>20</sup> act ctg tac gac gat gac gat aag gat  
 Gly Gly Gin Gln Met Gly Arg Thr Leu Tyr Asp Asp Asp Asp Lys Asp  
96

cga tgg gga tcc gag ctc gag atc tgc agc agt tct gaa gaa tac aag  
 Arg Trp Gly Ser Glu Leu Glu Ile Cys Ser Ser Ser Glu Glu Tyr Lys  
 35 40 45

```

ggt ggt tat tac cca ggc aat tcg aac cac tat cat tca ggt ggt agt
Gly Gly Tyr Tyr Pro Gly Asn Ser Asn His Tyr His Ser Gly Gly Ser
      50      55      60
192

```

tat cac gga tcc ggc tac cat gga gga tat aag gga aag tat tac gga 240  
 Tyr His Gly Ser Gly Tyr His Gly Gly Tyr Lys Gly Lys Tyr Tyr Gly  
 65 70 75 80

```

aag gca aag aaa tac tat tat aaa tat aaa aac agc gga aaa tac aag 288
Lys Ala Lys Lys Tyr Tyr Tyr Lys Tyr Lys Asn Ser Gly Lys Tyr Lys
          85           90           95

```

tat cta aag aaa gct aga aaa tac cat aga aag ggt tac aag aag tat	336
Tyr Leu Lys Lys Ala Arg Lys Tyr His Arg Lys Gly Tyr Lys Lys Tyr	
100 105 110	

```

tat gga ggt agc agt gaa ttc gct aaa ccg tct tac ccg ccg acc tac 384
Tyr Gly Ser Ser Glu Phe Ala Lys Pro Ser Tyr Pro Pro Thr Tyr
115          120          125

```

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aaa gca aaa ccc tcg tac cca ccg act tat aag gct aaa cct agc tat Lys Ala Lys Pro Ser Tyr Pro Pro Thr Tyr Lys Ala Lys Pro Ser Tyr 130 135 140	432
cca cct acg tac aaa gct aaa ccg tct tac ccg ccg act tac aaa gca Pro Pro Thr Tyr Lys Ala Lys Pro Ser Tyr Pro Pro Thr Tyr Lys Ala 145 150 155 160	480
aaa ccg tcc tac cct ccg acc tat aag gct aaa ccg agt tac ccc ccg Lys Pro Ser Tyr Pro Pro Thr Tyr Lys Ala Lys Pro Ser Tyr Pro Pro 165 170 175	528
act tac aaa taa 540 Thr Tyr Lys	
<210> 20	
<211> 179	
<212> PRT	
<213> Artificial Sequence	
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Met Gly Gly Ser His His His His His His Gly Met Ala Ser Met Thr 1 5 10 15	
Gly Gly Gln Gln Met Gly Arg Thr Leu Tyr Asp Asp Asp Asp Lys Asp 20 25 30	
Arg Trp Gly Ser Glu Leu Glu Ile Cys Ser Ser Ser Glu Glu Tyr Lys 35 40 45	
Gly Gly Tyr Tyr Pro Gly Asn Ser Asn His Tyr His Ser Gly Gly Ser 50 55 60	
Tyr His Gly Ser Gly Tyr His Gly Gly Tyr Lys Gly Lys Tyr Tyr Gly 65 70 75 80	
Lys Ala Lys Lys Tyr Tyr Lys Tyr Lys Asn Ser Gly Lys Tyr Lys 85 90 95	
Tyr Leu Lys Ala Arg Lys Tyr His Arg Lys Gly Tyr Lys Lys Tyr 100 105 110	
Tyr Gly Gly Ser Ser Glu Phe Ala Lys Pro Ser Tyr Pro Pro Thr Tyr 115 120 125	
Lys Ala Lys Pro Ser Tyr Pro Pro Thr Tyr Lys Ala Lys Pro Ser Tyr 130 135 140	
Pro Pro Thr Tyr Lys Ala Lys Pro Ser Tyr Pro Pro Thr Tyr Lys Ala 145 150 155 160	
Lys Pro Ser Tyr Pro Pro Thr Tyr Lys Ala Lys Pro Ser Tyr Pro Pro 165 170 175	
Thr Tyr Lys	

<210> 21  
<211> 642  
<212> DNA  
<213> Artificial Sequence

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<220>
<223> construct for expression of Bioadhesive protein(mgfp-151) in
pMDG151 vector
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<220>  
<221> CDS  
<222> (1)..(639)  
<223> Bioadhesive recombinant protein expressed in pMDG151 vector

ccg tct tac ccg ccg acc tac aaa gca aaa ccc tcg tac cca ccg act  
 Pro Ser Tyr Pro Pro Thr Tyr Lys Ala Lys Pro Ser Tyr Pro Pro Thr  
 20 25 30

tat aag gct aaa cct agc tat cca cct acg tac aaa gct aaa ccg tct 144  
Tyr Lys Ala Lys Pro Ser Tyr Pro Pro Thr Tyr Lys Ala Lys Pro Ser  
35 40 45

tac ccg ccg act tac aaa gca aaa ccg tcc tac cct ccg acc tat aag	192
Tyr Pro Pro Thr Tyr Lys Ala Lys Pro Ser Tyr Pro Pro Thr Tyr Lys	
50 55 60	

```

gct aaa ccg agt tac ccc ccg act tac aaa ggc tgc agt tct gaa gaa 240
Ala Lys Pro Ser Tyr Pro Pro Thr Tyr Lys Gly Cys Ser Ser Glu Glu
 65      70          75      80

```

tac aag ggt ggt tat tac cca ggc aat tcg aac cac tat cat tca ggt  
 Tyr Lys Gly Gly Tyr Tyr Pro Gly Asn Ser Asn His Tyr His Ser Gly  
           85             90             95

```

ggt agt tat cac gga tcc ggc tac cat gga gga tat aag gga aag tat 336
Gly Ser Tyr His Gly Ser Gly Tyr His Gly Gly Tyr Lys Gly Lys Tyr
          100      105      110

```

tac gga aag gca aag aaa tac tat tat aaa tat aaa aac agc gga aaa 384  
 Tyr Gly Lys Ala Lys Lys Tyr Tyr Tyr Lys Tyr Lys Asn Ser Gly Lys  
     115              120              125

tac aag tat cta aag aaa gct aga aaa tac cat aga aag ggt tac aag 432  
 Tyr Lys Tyr Leu Lys Ala Arg Lys Tyr His Arg Lys Gly Tyr Lys  
 130 135 140

```

aag tat tat gga ggt agc agt gaa ttc gct aaa ccg tct tac ccg ccg        480
Lys Tyr Tyr Gly Gly Ser Ser Glu Phe Ala Lys Pro Ser Tyr Pro Pro
145          150          155          160

```

```

acc tac aaa gca aaa ccc tcg tac cca ccg act tat aag gct aaa cct      528
Thr Tyr Lys Ala Lys Pro Ser Tyr Pro Pro Thr Tyr Lys Ala Lys Pro
165          170          175

```

```

agc tat cca cct acg tac aaa gct aaa ccg tct tac ccg ccg act tac      576
Ser Tyr Pro Pro Thr Tyr Lys Ala Lys Pro Ser Tyr Pro Pro Thr Tyr
180          185          190

```

aaa gca aaa ccg tcc tac cct ccg acc tat aag gct aaa ccg agt tac 624  
 Lys Ala Lys Pro Ser Tyr Pro Pro Thr Tyr Lys Ala Lys Pro Ser Tyr

ccc ccg act tac aaa t aa  
Pro Pro Thr Tyr Lys  
210

<210> 22  
<211> 213  
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Tyr Pro Pro Thr Tyr Lys Ala Lys Pro Ser Tyr Pro Pro Thr Tyr Lys  
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Ala Lys Pro Ser Tyr Pro Pro Thr Tyr Lys Gly Cys Ser Ser Glu Glu  
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Tyr Lys Gly Gly Tyr Tyr Pro Gly Asn Ser Asn His Tyr His Ser Gly  
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Gly Ser Tyr His Gly Ser Gly Tyr His Gly Gly Tyr Lys Gly Lys Tyr  
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Tyr Gly Lys Ala Lys Lys Tyr Tyr Lys Tyr Lys Asn Ser Gly Lys  
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Tyr Lys Tyr Leu Lys Lys Ala Arg Lys Tyr His Arg Lys Gly Tyr Lys  
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Lys Tyr Tyr Gly Gly Ser Ser Glu Phe Ala Lys Pro Ser Tyr Pro Pro  
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